

CLAIMS

- 1/ A swirling effect nozzle having substance feed channels opening out into a swirling chamber communicating with an outlet orifice, wherein the ratio
- 5 A_p/A_o is less than or equal to 0.5 and the ratio $A_p/(D_s \cdot d_o)$ is less than or equal to 0.2;

where:

- A_p is the smallest total section offered by the channels to the passage of the substance;
- 10 A_o is the section of the outlet orifice;
- d_o is the diameter of the outlet orifice; and
- D_s is the diameter of the swirling chamber.

- 2/ A nozzle according to claim 1, wherein the ratio L_s/D_s
- 15 is less than or equal to 0.25;

where:

L_s is the length of the portion of the swirling chamber parallel to the axis of the nozzle and measured along the axis of the nozzle.

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- Sub Cl* 3/ A nozzle according to claim 1, having a plurality of channels, preferably two to six channels, and more preferably still four channels.

- 25 4/ A nozzle according to claim 1, wherein the ratio A_p/A_o is less than or equal to 0.4, advantageously less than or equal to 0.3, preferably lies in the range 0.15 to 0.35, and more preferably lies in the range 0.2 to 0.3.

- 30 5/ A nozzle according to claim 1, wherein the ratio $A_p/(D_s \cdot d_o)$ is less than or equal to 0.15, preferably lies in the range 0.1 to 0.15, and more preferably lies in the range 0.11 to 0.14.

- 35 6/ A nozzle according to claim 1, wherein the ratio L_s/D_s is less than or equal to 0.2, is preferably less than or

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equal to 0.15, and more preferably lies in the range 0.1 to 0.15.

5 7/ A nozzle according to claim 1, wherein the outlet orifice is circularly cylindrical and connects to the swirling chamber via a tapering chamber that converges towards the outlet.

SUB a2
10 8/ A nozzle according to claim 1, wherein d_o lies in the range 0.4 mm to 1.2 mm, and preferably in the range 0.6 mm to 0.8 mm;
where:

d_o is the diameter of the outlet orifice.

15 9/ A nozzle according to claim 1, wherein L_s lies in the range 0.1 mm to 0.2 mm;
where:

L_s is the length of the portion of the swirling chamber parallel to the axis of the nozzle as measured along said axis.
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SUB a3
25 10/ A nozzle according to claim 1, wherein D_s lies in the range 0.6 mm to 1.4 mm, preferably in the range 0.8 mm to 1.2 mm, and is more preferably close to 1 mm;
where:

D_s is the diameter of the swirling chamber.

30 11/ A dispenser head, including a nozzle as defined in claim 1.

12/ A head according to claim 11, wherein the nozzle is engaged on a center post.

35 13/ An aerosol receptacle, including a nozzle as defined in claim 1.

14/ A receptacle according to claim 13, containing a liquefied propellant gas.

Sub A4
5 15/ A receptacle according to claim 13, containing a propellant gas constituted by a non-liquefied compressed gas, preferably compressed air.

16/ A receptacle according to claim 14, containing a cosmetic.

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17/ A receptacle according to claim 16, wherein said cosmetic is a hair spray.

18/ A receptacle according to claim 16, wherein the
15 cosmetic is a deodorant.

Sub A5
20 19/ A receptacle according to claim 14, wherein the mean droplet size of the spray, when the receptacle is full and at 20°C, lies in the range 30 μm to 100 μm , preferably lies in the range 40 μm to 80 μm , and more preferably still is close to 60 μm .

20/ A receptacle according to claim 14, wherein the flow rate, when the receptacle is full and at 20°C, lies in
25 the range 0.3 g/s to 1.5 g/s, and preferably lies in the range 0.4 g/s to 1 g/s.

21/ A receptacle according to claim 14, wherein the puff force, measured at 20°C and when the receptacle is full,
30 is less than or equal to 0.05 N, and is preferably close to 0.025 N.

22/ A receptacle according to claim 14, wherein the pressure inside the receptacle, when it is full and at
35 20°C, lies in the range 2 bars to 6 bars. ✓

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